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Cropland Trends Across the Nation

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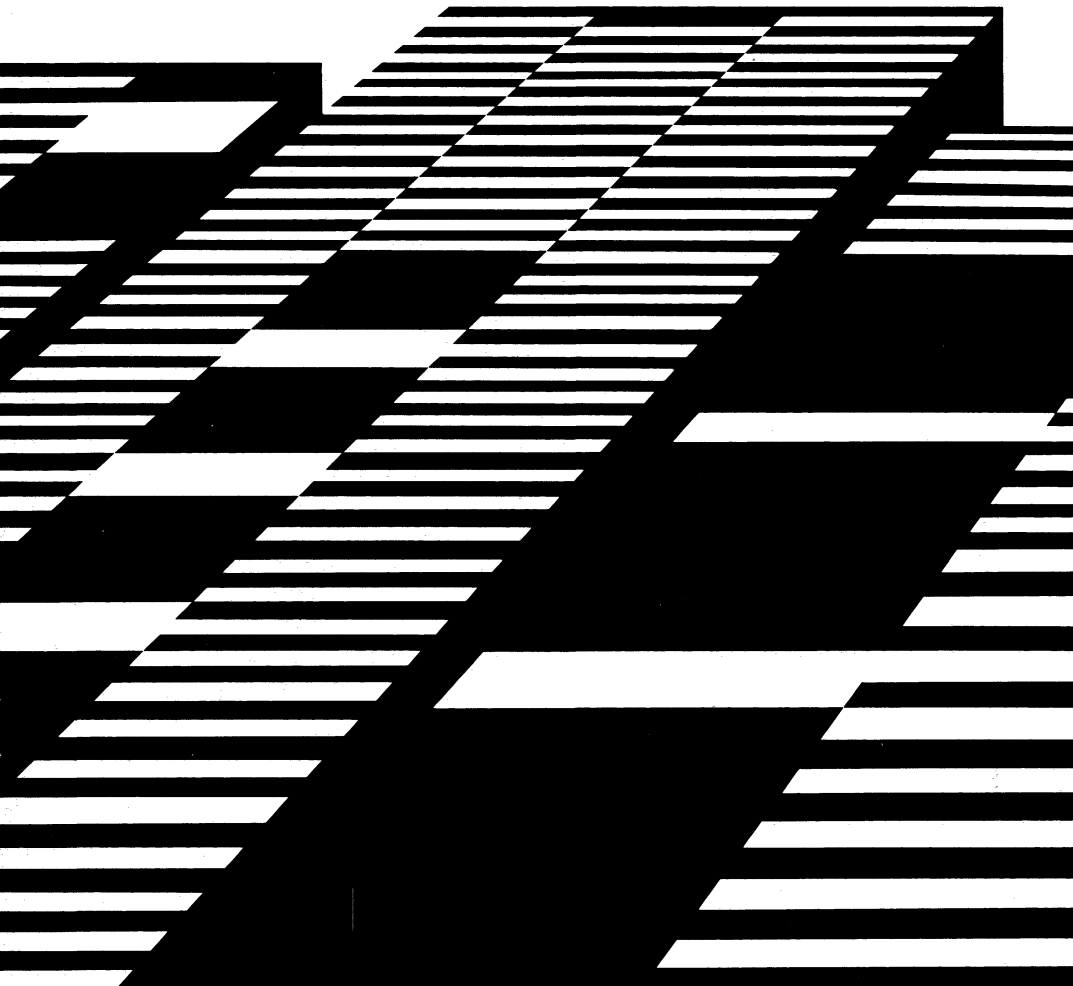

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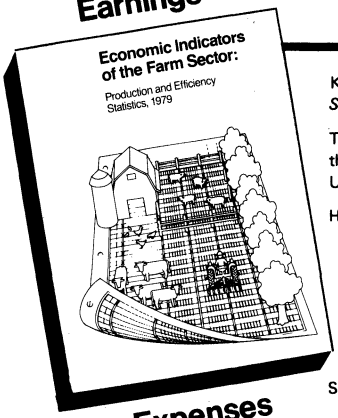

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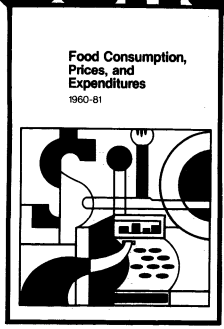

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Cropland Trends Across the Nation, by James Horsfield and Norman Landgren. Natural Resource Economics Division, Economic Research Service, U.S. Department of Agriculture. AER-494.

Abstract

Global agricultural demand spurred expansion of U.S. cropland use over the last decade to a record 391 million acres in 1981, 4 million acres more than the previous record established in 1949. The contraction of cropland use after 1949 and subsequent expansion in the seventies was accompanied by major regional shifts in the pattern of agricultural land use revealed by analysis of county data over the period 1949-78. Cropland acreage increased in the Corn Belt, Delta States, Southern Plains, and Mountain regions during 1949-78, and declined in the Northeast, Appalachian, and Southeast regions. Factors such as regional comparative advantage and natural resource development triggered regional expansion and contraction of cropland use.

Keywords: Cropland trends, comparative advantage, farm production regions, land use, land conversion.

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Summary

Major changes in U.S. cropland use since 1949 generally reflect changes in supply and demand conditions. Cropland harvested, as reported by the Census of Agriculture, dropped by 71.6 million acres from 1949 to 1969 when productivity increased faster than domestic consumption and Government programs of price support and supply control reduced cropland acreage. However, cropland harvested increased by 44.8 million acres to 317.7 million acres between 1969 and 1978 as farmers responded to worldwide crop shortages and increased demand for U.S. farm products. This report reviews the amount and location of land used for crop production since 1949.

Farmers and landowners have shown considerable resiliency and flexibility in their cropping decisions: the Nation's cropland acreage shifted, contracted, and expanded in response to changing market conditions during the 1949-78 period. Cropland use change is also influenced by natural resource endowments and investments in irrigation facilities, drainage improvements, and clearing.

Cropland used for crops declined in all regions except the Corn Belt and Mountain regions between 1949 and 1969. Declines were especially sharp in the Northeast, Appalachian, and Southeast regions. Declining trends were generally reversed during 1969-78, with declines continuing only in the Northern and Southern Plains.

Contents

Cropland Trends Across the Nation

James Horsfield and Norman Landgren*

Introduction

Farmers in the United States used a record 391 million acres of land for crops in 1981. The previous high was in 1949 when land used for crops was 387 million acres. Expanded exports and favorable commodity prices brought new lands and previously cropped lands into crop use during the seventies. The record cropland use comes at a time when questions have been raised about the competition for land from nonagricultural uses and the potential dampening of agricultural production.

This report examines the regional patterns and shifts in cropland use, the amount and geographic location of the land going out of production during the fifties and sixties, and the land coming into production in the seventies. Further, the study indicates future land supplies and potential restraints on land conversion for crops if market forces call for additional production.

Sources of data for this study are the U.S. Census of Agriculture, 1949 through 1978. These 5-year censuses provide the most comprehensive and consistent periodic inventories of cropland. Two periods are compared: 1949-69, a period of land contraction, and 1969-78, a period of cropland expansion. Cropland acreage change was measured at the State level to provide more detail on cropland use changes. The detailed comparisons of the two historical periods covered in this report. Overall cropland changes since 1949 are also analyzed.

Different cropland use terms are used throughout this report. The following definitions help the reader in understanding the cropland changes:

Land used for crops—harvested plus land on which all crops failed or used as cultivated summer fallow. This series is published in *Economic Indicators of the Farm Sector: Production and Efficiency Statistics,* an annual publication of the Economic Research Service (see order form on inside back cover).

Cropland base—all land reported by farmers to the Census of Agriculture as cropland. Also referred to as "total cropland."

Cropland used for crops—total cropland net of cropland used for pasture or grazing.

Harvested cropland—total cropland net of cropland used for pasture or grazing, idle cropland, cropland planted to soil improvement crops not harvested or pastured, cropland in summer fallow, and cropland on which all crops failed.

U.S. Cropland Trends

Trends in the acreage of harvested cropland over the past decades relate closely to demands for U.S. farm products. Demands stimulated by World War II and reconstruction resulted in a high level of 344.4 million acres of cropland harvested in 1949. As demand waned and agricultural productivity continued to grow, U.S. agriculture entered a period of excess production capacity. Large stocks of commodities were accumulated under production control and price support programs designed to reduce the amount of land in crop production while maintaining farm income. From 1961 through 1972, 40 to 60 million acres were withheld annually from crop production by Government programs. These conditions triggered a steady decline of cropland harvested to 272.8 million acres in 1969, according to the Census of Agriculture (table 1).

In the early seventies, export demand for U.S. farm products surged due to crop shortages in significant producing areas of the world. Stocks were drawn down, and farmers were encouraged to plant more acreage. By 1974, cropland harvested had increased 30 million acres from the 1969 low; another 15 million acres had been added by 1978. This trend continued through 1981, spurred by steady growth in export demands.[2]

*The authors are agricultural economists in the Natural Resource Economics Division, Economic Research Service, U.S. Department of Agriculture.

[1]Data in this report have been adjusted to achieve comparability between censuses to the extent possible or practical. A discussion of factors affecting comparability and adjustment procedures used appears in the appendix.

[2]USDA's Crop Reporting Board reported an increase of 29.5 million acres in principal crops harvested between 1978 and 1981. Although principal crops harvested, as reported by the Crop Reporting Board, and cropland harvested, as reported by the Census of Agriculture, are not comparable by definition, acreage changes moved in the same direction in both cases.

Census data are not adequate to show accurately the prior uses of land. Clearly, much of the increased acreage between 1969 and 1974 came from land withheld from crop production under Government programs and was returned to crops under the stimuli of relaxed production controls and favorable crop price-production cost relationships. Acreages withheld from production under these programs dropped sharply in 1973, and by 1974, dipped below 3 million acres. Since 1974, annual set-aside or diversion requirements have been implemented only in 1978 and 1979 when 18 and 12 million acres, respectively, were withheld from crop production. A considerable portion of the increase in harvested cropland from 1974 to 1978 likely came from cropland used only for pasture. At the same time, the acreage of other cropland increased slightly. However, cropland used only for pasture (a component of other cropland) decreased substantially. Some land was newly developed for crop production by irrigation, land clearing, and drainage throughout the 1969-78 period.

Regional Cropland Trends

National trends in the total cropland base and the harvested cropland components do not reveal significant variations among the various producing areas of the Nation. However, significant regional variations exist due to factors altering comparative advantage, differences in the impacts of public programs affecting agriculture and natural resources, and competition for resources of nonagricultural sectors.

Table 1—Cropland uses, 48 States, census years 1949-78

Year	Harvested	Other[1]	Total
		Million acres	
1949	344.4	133.4	477.8
1954	332.9	126.8	459.7
1959	311.3	136.2	447.5
1964	286.7	147.7	434.4
1969	272.8	185.8	458.6
1974	[2]303.0	[2]138.5	[2]441.5
1978	[3]317.7	[3]139.6	[3]457.3

[1]Includes cropland that was either idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, land on which all crops failed, or cropland used only for pasture or grazing.

[2]1974 published data adjusted to 1969 farm definition.

[3]1978 preliminary published data adjusted to 1969 farm definition and 1969 enumeration techniques.

Source: U.S. Census of Agriculture.

Trends during 1949-78

Although the Nation's total cropland base declined by 20.5 million acres between 1949 and 1978, total cropland increased in the Corn Belt, Delta States, Southern Plains, and Mountain regions (tables 2 and 3). Cropland abandonment was especially significant in the Northeast, Appalachian, and Southeast regions, at declines of 30 percent, 20 percent, and 27 percent, respectively. Nationally, over this 30-year period, harvested cropland decreased more than the total cropland base decreased. Relative to 1949, percentage reductions in harvested cropland were the greatest in the Northeast, Appalachian, and Southeast regions; however, the greatest acreage reductions occurred in the Northern and Southern Plains regions. The Corn Belt, Delta States, Mountain, and Pacific regions had greater acreages of cropland harvested in 1978 than in 1949.

Trends during 1949-69

From 1949 to 1969, a period of excess agricultural production capacity and programs of price supports and production controls, the acreage of harvested cropland declined in every region (tables 4 and 5). Decreases in harvested cropland in some regions were accompanied by similarly corresponding increases in other cropland in those regions, reflecting the impact of these programs. Lands diverted from crop production by these programs were not removed from the cropland base but were temporarily idled or planted to soil-conserving crops which were not harvested. Such temporary diversions were particularly evident in the Lake States, Corn Belt, Northern and Southern Plains, and Mountain regions, all of which produce significant amounts of either feed grains or wheat. In other areas, notably the Northeast, Appalachian, and Southeast regions, significant increases in other cropland failed to offset reductions in harvested cropland, indicating abandonment of large acreages of cropland and reversion to other uses due to economic disadvantage or other factors.

Trends during 1969-78

The acreage of cropland harvested increased in every region during the 9-year period 1969-78, reaching a national increase of 44.8 million acres (tables 6 and 7). Accompanying this increase was a decrease of 46.2 million acres in other cropland, which also was spread among all regions, resulting in a net reduction of 1.4 million acres in the Nation's cropland base. Much of the increase in harvested acreage probably occurred on cropland that had been temporarily idle or in soil-conserving uses in 1969, but was planted to crops in the seventies in response to improved market demands and relaxed production controls. Great Plains land was diverted from crop production

in the fifties and sixties to permanent pasture or range and was no longer classified as cropland in 1978. Cropland used only for pasture declined in every region and probably was planted to crops, significantly increasing harvested cropland in the Corn Belt where nearly 25 percent of the national reduction in cropland pasture occurred.

The increases in harvested cropland, by region during 1969-78, ranged from 4.1 percent in the Southern Plains to 25.4 percent in the Southeast and 29.5 percent in the Appalachian region. The increases in the Appalachian and Southeast regions, which experienced the largest percentage decreases in harvested cropland between 1949-69, were particularly notable. These regions and the Northeast region accounted for 18 percent of the total increase in harvested cropland for the 48 States, although they had only 12.7 percent of the harvested cropland in 1969. The climatic suitability of these regions for major crops and the physical limitations for rapid expansion of cropland acreage in the Western States is a possible explanation. The large decreases in harvested cropland in these regions between 1949-69 provided a large reserve of other cropland that was available for a rapid expansion of harvested acreage after 1969.

In all areas except the Northern and Southern Plains and the Appalachian regions, the increase in harvested cropland between 1969 and 1978 exceeded the decrease in other cropland, implying conversion of land classified as noncropland in the 1969 Census to harvested cropland. Some of these conversions probably required only the plowing of permanent pasture and range; other conversions required public or private investment in land clearing, drainage, or irrigation.

Changes in Cropland Used for Crops, by County and Region

Cropland used for crops increased by 29.6 million acres in 953 counties from 1949 to 1978 (tables 8 and 9 and fig. 1). The 1978 cropland used for crops estimates were developed from county-level data tapes which precluded adjustments to the 1969 farm definition; thus, estimates are not comparable with other 1978 cropland estimates elsewhere in this report, which have been adjusted to the 1969 farm definition. Also, 1978 cropland used for crops estimates in this report do not agree with State summary estimates published by the Census. The latter includes an adjustment for underenumeration, and the former does not. Concurrent with the cropland used for crops increase, a decrease of 57.2 million acres spanned 2,154 counties. The Corn Belt, Delta States, Mountain, and Pacific regions experienced net increases. Substantial portions of the acreage of cropland used for crops were abandoned in the Northeast, Appalachian, and Southeast regions.

Table 2—Cropland uses and changes, by region, 1949-78

Region[1]	1949			1978[2]			Change, 1949-78		
	Harvested	Other[3]	Total[4]	Harvested	Other[3]	Total[4]	Harvested	Other[3]	Total[4]
	Million acres								
Northeast	16.9	7.6	24.6	12.8	4.4	17.2	−4.1	−3.2	−7.4
Lake States	37.6	8.8	46.4	35.8	7.5	43.3	−1.8	−1.3	−3.1
Corn Belt	76.5	19.5	96.0	80.9	18.8	99.7	+4.4	−.7	+3.7
Northern Plains	78.8	21.9	100.7	68.2	31.4	99.6	−10.6	+9.5	−1.0
Appalachian	20.9	16.4	37.4	16.7	13.0	29.7	−4.3	−3.4	−7.6
Southeast	18.5	9.4	27.9	13.3	7.0	20.3	−5.2	−2.4	−7.6
Delta States	15.2	9.1	24.3	18.3	6.8	25.1	+3.1	−2.3	+.8
Southern Plains	40.0	14.0	54.0	29.3	25.0	54.3	−10.8	+11.0	+.3
Mountain	24.5	15.2	39.7	25.3	17.7	43.0	+.8	+2.6	+3.4
Pacific[5]	15.4	11.6	27.0	17.1	8.0	25.1	+1.7	−3.6	−2.0
48 States[4]	344.4	133.4	477.8	317.7	139.6	457.3	−26.7	+6.2	−20.5

[1]See table 3 for State data in each region.
[2]1978 preliminary published data adjusted to 1969 farm definition and 1969 enumeration techniques.
[3]Includes cropland that was either idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, land on which all crops failed, or cropland used only for pasture or grazing.
[4]Acreages may not add to totals due to rounding.
[5]Excludes Alaska and Hawaii.

Source: U.S. Census of Agriculture.

Only the Corn Belt and Mountain regions had a net increase during 1949-69 when abandonment was most pronounced (tables 10 and 11 and fig. 2). Cropland used for crops increased in 1,785 counties at an average rate of about 1 million acres a year, but this increase was more than offset by a loss of 2.9 million acres per year in 2,322 counties for a net average annual national decrease of 1.9 million acres. During this period, the net decrease of cropland used for crops amounted to one-third or more of the 1949 base in the Northeast, Appalachian, and Southeast regions. Significant net decreases also occurred in the Lake States and Northern and Southern Plains, but amounted to only 9, 4, and 14 percent, respectively, of the 1949 base.

The 1949-69 national trend of declining acreage was reversed, according to the 1978 county census, when cropland used for crops increased in 1,875 of 3,107 counties for a net national increase of 10.4 million acres (tables 12 and 13 and fig. 3). Only the Northern and Southern Plains experienced modest net decreases.

No single factor explains either the direction or magnitude of cropland used for crops acreage changes in a

Table 3—Cropland uses and changes, by State, 1949-78

State and region	1949			1978[1]			Change, 1949-78		
	Harvested	Other[2]	Total[3]	Harvested	Other[2]	Total[3]	Harvested	Other[2]	Total[3]
				1,000 acres					
Connecticut	308	189	498	171	67	238	−137	−123	−260
Delaware	389	146	535	493	33	526	+104	−113	−9
Maine	932	475	1,407	470	202	672	−462	−273	−735
Maryland	1,531	754	2,285	1,493	355	1,849	−38	−398	−436
Massachusetts	376	248	624	202	85	286	−174	−163	−338
New Hampshire	290	161	451	128	53	181	−162	−107	−269
New Jersey	782	309	1,091	591	134	725	−191	−175	−365
New York	5,792	2,693	8,485	4,369	1,669	6,039	−1,422	−1,024	−2,446
Pennsylvania	5,637	2,308	7,945	4,286	1,514	5,800	−1,351	−794	−2,145
Rhode Island	40	41	80	24	10	34	−16	−30	−46
Vermont	859	297	1,156	560	260	819	−299	−37	−336
Northeast	16,937	7,620	24,557	12,788	4,382	17,170	−4,149	−3,238	−7,387
Michigan	7,797	3,246	11,043	6,795	1,697	8,492	−1,002	−1,549	−2,551
Minnesota	19,709	2,752	22,461	19,146	3,518	22,663	−564	+766	+203
Wisconsin	10,112	2,794	12,906	9,888	2,291	12,179	−224	−503	−727
Lake States	37,618	8,791	46,410	35,828	7,506	43,334	−1,790	−1,285	−3,075
Illinois	20,364	3,579	23,943	22,696	2,534	25,230	+2,331	−1,045	+1,286
Indiana	11,001	2,828	13,828	11,829	1,796	13,625	+828	−1,031	−203
Iowa	22,547	3,502	26,049	23,634	4,472	28,105	+1,086	+970	+2,056
Missouri	12,264	6,493	18,757	12,468	8,015	20,483	+204	+1,522	+1,726
Ohio	10,296	3,083	13,379	10,245	1,981	12,226	−51	−1,102	−1,153
Corn Belt	76,472	19,485	95,957	80,870	18,798	99,668	+4,399	−687	+3,712
Kansas	21,494	7,946	29,440	19,009	10,931	29,940	−2,485	+2,985	+501
Nebraska	19,407	4,369	23,776	16,369	5,923	22,292	−3,038	+1,554	−1,484
North Dakota	20,353	7,275	27,628	18,978	9,648	28,627	−1,374	+2,373	+999
South Dakota	17,528	2,294	19,822	13,864	4,907	18,772	−3,663	+2,613	−1,050
Northern Plains	78,781	21,884	100,666	68,221	31,410	99,631	−10,561	+9,526	−1,035
Kentucky	5,054	6,547	11,601	4,536	4,951	9,487	−518	−1,596	−2,114
North Carolina	5,782	1,916	7,698	4,501	1,692	6,193	−1,282	−224	−1,506
Tennessee	5,575	4,345	9,920	4,441	3,532	7,973	−1,134	−812	−1,947
Virginia	3,314	2,475	5,789	2,625	2,000	4,624	−689	−476	−1,165
West Virginia	1,218	1,135	2,354	584	865	1,449	−634	−270	−905
Appalachian	20,943	16,419	37,362	16,686	13,040	29,727	−4,257	−3,379	−7,636

See footnotes at end of table.

Continued—

particular county or region. The changes indicate that farm operators have responded to all factors influencing comparative advantage, including the quantity and quality of natural resources, technological development, market demands, the general economy, public and private investment in resource development, and agricultural and environmental policies. However, certain factors appeared to be associated with some of the most prominent acreage changes mapped in figures 1, 2, and 3. The impact of urban development on the use of land for crops is especially evident around the major metropolitan centers of Chicago, Los Angeles, and San Francisco, and along the front range of the Rocky Mountains in Colorado. Urban development was also a factor in the decline of the use of land for crops in the eastern part of the country. The almost universal decline in this area during the 1949-69 period, however, is probably due to the loss of ability to compete economically with other areas in the production of crops under limited market conditions because of low soil fertility and impediments to adoption of improved production technology. The trend of cropland abandonment reversed slightly following increased market demands and higher crop prices.

Great Plains cropland used for crops dropped during 1949-69 due to increasingly unprofitable dryland crop production versus farming in more humid areas, concern over soil erosion during the drought of the midfifties, and the

Table 3—Cropland uses and changes, by State, 1949-78—Continued

State and region	1949			1978[1]			Change, 1949-78		
	Harvested	Other[2]	Total[3]	Harvested	Other[2]	Total[3]	Harvested	Other[2]	Total[3]
				1,000 acres					
Alabama	5,729	2,992	8,722	3,380	2,187	5,567	−2,349	−805	−3,154
Florida	1,728	1,596	3,324	2,717	1,648	4,365	+988	+52	+1,040
Georgia	7,098	3,389	10,487	4,701	2,224	6,925	−2,397	−1,165	−3,562
South Carolina	3,960	1,426	5,386	2,532	904	3,436	−1,428	−522	−1,950
Southeast	18,516	9,403	27,919	13,330	6,963	20,292	−5,186	−2,441	−7,626
Arkansas	5,930	3,724	9,654	7,594	2,864	10,458	+1, 664	−860	+803
Louisiana	3,149	2,509	5,657	4,851	1,574	6,425	+1,702	−934	+768
Mississippi	6,136	2,836	8,972	5,866	2,365	8,231	−270	−470	−741
Delta States	15,215	9,068	24,284	18,311	6,803	25,114	+3,096	−2,265	+830
Oklahoma	11,896	4,120	16,016	8,597	5,902	14,499	−3,299	+1,782	−1,517
Texas	28,108	9,862	37,970	20,653	19,106	39,760	−7,454	+9,244	+1,789
Southern Plains	40,004	13,982	53,986	29,250	25,008	54,259	−10,753	+11,026	+273
Arizona	884	382	1,266	1,115	459	1,575	+231	+78	+309
Colorado	6,893	4,135	11,028	5,860	4,814	10,674	−1,033	+679	−354
Idaho	3,648	1,582	5,230	4,831	1,749	6,580	+1,183	+168	+1,350
Montana	7,576	6,352	13,929	8,748	7,578	16,326	+1,172	+1,226	+2,398
Nevada	421	198	619	585	247	832	+163	+49	+212
New Mexico	1,898	941	2,839	1,211	1,080	2,291	−687	+139	−548
Utah	1,279	773	2,053	1,171	866	2,037	−109	+92	−16
Wyoming	1,901	812	2,712	1,786	945	2,730	−115	+133	+18
Mountain	24,500	15,175	39,675	25,306	17,739	43,044	+806	+2,563	+3,369
California	7,957	5,808	13,765	8,819	2,726	11,545	+862	−3,082	−2,220
Oregon	3,219	2,318	5,537	3,223	1,990	5,213	+4	−328	−324
Washington	4,237	3,484	7,721	5,027	3,270	8,298	+790	−213	+577
Pacific	15,412	11,611	27,023	17,069	7,987	25,056	+1,657	−3,624	−1,967
48 States[3]	344,398	133,439	477,837	317,660	139,636	457,295	−26,739	+6,196	−20,542

[1]1978 preliminary published data adjusted to 1969 farm definition and 1969 enumeration techniques.
[2]Includes cropland that was either idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, land on which all crops failed, or cropland used only for pasture or grazing.
[3]Acreages may not add to totals due to rounding.

Source: U.S. Census of Agriculture.

conversion of cropland to grass. During the 1969-78 period, increasing pumping lifts coupled with higher energy costs caused irrigated lands to be abandoned in a few local areas. Relative stability in the acreage prevailed, although cropland used for crops continued to decline in many counties throughout the Great Plains between 1969 and 1978. Land used for crops in all counties declined only about 4 percent from the regional 1969 base; regional increases reduced the net loss to only 1 to 2 percent.

Public and private investments in irrigation account for large increases of land used for crops in the Ogallala aquifer area of the Great Plains, the Central Valley in California, southern Idaho, southeastern Washington, and the Florida Everglades agricultural area. Much of the more recent private investment in irrigation from groundwater sources has been stimulated by the development of center pivot irrigation systems, which require little labor for operation and permit uniform distribution of water over undulating land.

Investments in land clearing and drainage have been strong in the Mississippi Delta. Large acreages formerly covered with bottom land hardwood species have been cleared, drained, and planted to cotton and, more recently, soybeans. Because of the high productivity of these alluvial soils, farmers cleared and drained the Delta throughout the fifties and sixties, even though land used for crops in adjacent areas was declining. Clearing and drainage continued through 1978 but may substantially decline in the future, particularly in the northern Delta where much of the suitable land has been developed. Other cleared and/or drained land for crops includes parts of the Corn Belt, Florida, and the Coastal Plain of North Carolina.

Increases in acreage used for crops in southwestern Louisiana and parts of the Texas gulf area between 1969 and 1978 may be due as much to changes in crop rotations as to land development or conversion from other uses. Typically, rice has been rotated with grass. Recently, farmers have rotated soybeans with rice. Thus, some land may have been classified as cropland pasture in 1969 with the same land classified as cropland harvested in 1978.

The large acreage increases for crops since 1949 in northern Montana resulted from the steady conversion of rangeland to summer fallowed wheat. Many farmers and ranchers have found that, with proper tillage and conservation practices, land will produce better and more stable returns after conversion from rangeland to wheat production. Farmers also converted land in the West Rivers area of South Dakota because of relatively high wheat prices in the midseventies.

Land used for crops in the Corn Belt has consistently increased over the past three decades, reflecting a compara-

Table 4—Cropland uses and changes, by region, 1949-69

Region[1]	1949			1969			Change, 1949-69		
	Harvested	Other[2]	Total[3]	Harvested	Other[2]	Total[3]	Harvested	Other[2]	Total[3]
				Million acres					
Northeast	16.9	7.6	24.6	11.2	5.8	17.0	−5.7	−1.8	−7.5
Lake States	37.6	8.8	46.4	29.3	13.2	42.5	−8.3	+4.4	−4.0
Corn Belt	76.5	19.5	96.0	66.9	32.7	99.5	−9.6	+13.2	+3.6
Northern Plains	78.8	21.9	100.7	61.5	41.8	103.3	−17.3	+19.9	+2.6
Appalachian	20.9	16.4	37.4	12.9	17.1	30.0	−8.1	+.7	−7.4
Southeast	18.5	9.4	27.9	10.6	9.2	19.8	−7.9	−.2	−8.1
Delta States	15.2	9.1	24.3	15.0	9.0	24.0	−.2	0	−.3
Southern Plains	40.0	14.0	54.0	28.1	27.3	55.4	−11.9	+13.3	+1.4
Mountain	24.5	15.2	39.7	22.5	20.0	42.4	−2.0	+4.8	+2.8
Pacific[4]	15.4	11.6	27.0	14.9	9.8	24.7	−.5	−1.8	−2.4
48 States[3]	344.4	133.4	477.8	272.8	185.8	458.6	−71.6	+52.4	−19.2

[1]See table 5 for State data in each region.
[2]Includes cropland that was either idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, land on which all crops failed, or cropland used only for pasture or grazing.
[3]Acreages may not add to totals due to rounding.
[4]Excludes Alaska and Hawaii.

Source: U.S. Census of Agriculture.

tive advantage over many other producing areas. Soils are fertile, natural moisture supplies are generally adequate, and the region has been able to adopt many of the advances in agricultural production technology. Acreage increases have been very modest, however, when compared with the size of the cropland used for crops base in this region.

Conclusions

The response of farmers to such factors as changing commodity demand; Government programs of price support and supply control; natural resource conservation and development, and environmental protection; development of new or improved production technologies; and competition for land and water resources by nonagricultural uses has resulted in significant shifts in the use of land for crops during the past 30 years. These factors and others combine to alter continuously the comparative advantage of producing areas.

Excess agricultural production capacity in the fifties and sixties resulted in economic obsolescence of the less productive cropland in much of the eastern part of the United States, and a significant portion of the cropland base was abandoned or converted to noncrop uses. Economic obso-

Table 5—Cropland uses and changes, by State, 1949-69

State and region	1949			1969			Change, 1949-69		
	Harvested	Other[1]	Total[2]	Harvested	Other[1]	Total[2]	Harvested	Other[1]	Total[2]
				1,000 acres					
Connecticut	308	189	498	162	90	252	−146	−100	−246
Delaware	389	146	535	423	82	505	+34	−64	−30
Maine	932	475	1,407	458	249	707	−474	−226	−700
Maryland	1,531	754	2,285	1,301	525	1,826	−230	−229	−459
Massachusetts	376	248	624	190	91	280	−186	−158	−344
New Hampshire	290	161	451	116	73	189	−174	−88	−261
New Jersey	782	309	1,091	496	211	707	−286	−98	−384
New York	5,792	2,693	8,485	3,836	2,246	6,082	−1,956	−447	−2,403
Pennsylvania	5,637	2,308	7,945	3,687	1,911	5,598	−1,950	−397	−2,347
Rhode Island	40	41	80	22	10	32	−18	−30	−48
Vermont	859	297	1,156	511	325	836	−3,474	+28	−319
Northeast	16,937	7,620	24,557	11,202	5,813	17,015	−5,734	−1,808	−7,542
Michigan	7,797	3,246	11,043	5,502	3,079	8,580	−2,296	−167	−2,463
Minnesota	19,709	2,752	22,461	15,649	6,662	22,311	−4,060	+3,911	−149
Wisconsin	10,112	2,794	12,906	8,134	3,430	11,564	−1,978	+637	−1,342
Lake States	37,618	8,791	46,410	29,285	13,171	42,456	−8,334	+4,380	−3,954
Illinois	20,364	3,579	23,943	19,352	5,477	24,829	−1,013	+1,898	+886
Indiana	11,001	2,828	13,828	9,670	3,881	13,552	−1,330	+1,054	−277
Iowa	22,547	3,502	26,049	19,287	8,452	27,739	−3,261	+4,950	+1,690
Missouri	12,264	6,493	18,757	10,036	10,919	20,955	−2,228	+4,426	+2,198
Ohio	10,296	3,083	13,379	8,515	3,932	12,447	−1,780	+849	−932
Corn Belt	76,472	19,485	95,957	66,860	32,661	99,521	−9,612	+13,177	+3,565
Kansas	21,494	7,946	29,440	17,649	14,119	31,768	−3,845	+6,173	+2,328
Nebraska	19,407	4,369	23,776	14,023	8,200	22,223	−5,384	+3,831	−1,554
North Dakota	20,353	7,275	27,628	17,175	12,284	29,459	−3,178	+5,009	+1,831
South Dakota	17,528	2,294	19,822	12,634	7,203	19,838	−4,893	+4,910	+16
Northern Plains	78,781	21,884	100,666	61,481	41,806	103,287	−17,300	+19,922	+2,622
Kentucky	5,054	6,547	11,601	3,128	6,315	9,443	−1,925	−232	−2,157
North Carolina	5,782	1,916	7,698	3,472	2,495	5,967	−2,310	+579	−1,731
Tennessee	5,575	4,245	9,820	3,472	4,931	8,404	−2,103	+587	−1,516
Virginia	3,314	2,475	5,789	2,278	2,323	4,601	−1,036	−153	−1,189
West Virginia	1,218	1,135	2,354	539	1,015	1,553	−679	−121	−800
Appalachian	20,943	16,419	37,362	12,889	17,079	29,968	−8,054	+660	−7,394

See footnotes at end of table.

Continued—

lescense together with annual commodity programs and cropland diversion programs resulted in large acreages of land being withdrawn from crop production in all major producing regions. Even during this period of generally unfavorable market conditions, localized areas endowed with natural resources that could be easily developed or could absorb improved production technology enhanced their relative comparative advantage, and crop acreages increased. Public and private investments in irrigation, land clearing, and drainage were especially important in intensifying land use of local areas.

Increased demands for agricultural commodities resulted in an increase in cropland harvested of nearly 45 million acres between 1969 and [illegible] more favorable crop price-production cost re[illegible] for that accompanied these increased demands reve[illegible] neral trend of cropland decline in the Eastern U[illegible]es, brought most of the cropland that had been [illegible]y Government programs back into crop productio[illegible]d in the conversion of some pasture to crops, ar[illegible]ded continuing incentives to develop new cropland i[illegible]in local areas. Every region shared in the rebou[illegible] the acreage of cropland harvested. Nationally, the [illegible]age of land used for crops increased in 65 percent of [illegible]ounties during the 1969-78 period.

Table 5—Cropland uses and changes, by State, 1949-69—Continued

State and region	1949			1969			Change, 1949-69		
	Harvested	Other[1]	Total[2]	Harvested	Other[1]	Total[2]	Harvested	Other[1]	Total[2]
				1,000 acres					
Alabama	5,729	2,992	8,722	2,706	3,083	5,789	−3,023	+91	−2,932
Florida	1,728	1,596	3,324	2,234	1,540	3,774	+506	−56	+450
Georgia	7,098	3,389	10,487	3,651	3,184	6,835	−3,447	−205	−3,652
South Carolina	3,960	1,426	5,386	2,042	1,398	3,440	−1,918	−28	−1,946
Southeast	18,516	9,403	27,919	10,633	9,205	19,838	−7,883	−198	−8,081
Arkansas	5,930	3,724	9,654	6,805	3,182	9,987	+874	−542	+332
Louisiana	3,149	2,509	5,657	3,443	2,399	5,842	+294	−109	+185
Mississippi	6,136	2,836	8,972	4,752	3,437	8,189	−1,385	+602	−783
Delta States	15,215	9,068	24,284	14,999	9,019	24,018	−216	−50	−266
Oklahoma	11,896	4,120	16,016	8,265	7,393	15,658	−3,631	+3,273	−358
Texas	28,108	9,862	37,970	19,825	19,938	39,762	−8,283	+10,075	+1,792
Southern Plains	40,004	13,982	53,986	28,089	27,331	55,420	−11,914	+13,349	+1,434
Arizona	884	382	1,266	1,079	552	1,631	+196	+170	+366
Colorado	6,893	4,135	11,028	5,266	5,508	10,773	−1,627	+1,373	−254
Idaho	3,648	1,582	5,230	3,955	2,218	6,172	+307	+636	+943
Montana	7,576	6,352	13,929	7,937	8,171	16,109	+361	+1,819	+2,180
Nevada	421	198	619	521	228	749	+100	+29	+129
New Mexico	1,898	941	2,839	1,008	1,274	2,282	−890	+333	−557
Utah	1,279	773	2,053	1,024	920	1,945	−255	+147	−108
Wyoming	1,901	812	2,712	1,686	1,103	2,788	−215	+291	+76
Mountain	24,500	15,175	39,675	22,476	19,973	42,449	−2,024	+4,798	+2,774
California	7,957	5,808	13,765	7,649	3,596	11,245	−308	−2,212	−2,520
Oregon	3,219	2,318	5,537	2,894	2,304	5,198	−325	−14	−340
Washington	4,237	3,484	7,721	4,367	3,863	8,230	+130	+379	+509
Pacific	15,412	11,611	27,023	14,910	9,763	24,672	−503	−1,848	−2,350
48 States[2]	344,398	133,439	477,837	272,824	185,821	458,646	−71,574	+52,382	−19,192

[1]Includes cropland that was either idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, land on which all crops failed, or cropland used only for pasture or grazing.
[2]Acreages may not add to totals due to rounding.

Source: U.S. Census of Agriculture.

Table 6—Cropland uses and changes, by region, 1969-78

Region[1]	1969			1978[2]			Change, 1969-78		
	Harvested	Other[3]	Total[4]	Harvested	Other[3]	Total[4]	Harvested	Other[3]	Total[4]
				Million acres					
Northeast	11.2	5.8	17.0	12.8	4.4	17.2	+1.6	−1.4	+0.2
Lake States	29.3	13.2	42.5	35.8	7.5	43.3	+6.5	−5.7	+.9
Corn Belt	66.9	32.7	99.5	80.9	18.8	99.7	+14.0	−13.9	+.1
Northern Plains	61.5	41.8	103.3	68.2	31.4	99.6	+6.7	−10.4	−3.7
Appalachian	12.9	17.1	30.0	16.7	13.0	29.7	+3.8	−4.0	−.2
Southeast	10.6	9.2	19.8	13.3	7.0	20.3	+2.7	−2.2	+.5
Delta States	15.0	9.0	24.0	18.3	6.8	25.1	+3.3	−2.2	+1.1
Southern Plains	28.1	27.3	55.4	29.3	25.0	54.3	+1.2	−2.3	−1.2
Mountain	22.5	20.0	42.4	25.3	17.7	43.0	+2.8	−2.2	+.6
Pacific[5]	14.9	9.8	24.7	17.1	8.0	25.1	+2.2	−1.8	+.4
48 States[4]	272.8	185.8	458.6	317.7	139.6	457.3	+44.8	−46.2	−1.4

[1]See table 7 for State data in each region.
[2]1978 preliminary published data adjusted to 1969 farm definition and 1969 enumeration techniques.
[3]Includes cropland that was either idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, land on which all crops failed, or cropland used only for pasture or grazing.
[4]Acreages may not add to totals due to rounding.
[5]Excludes Alaska and Hawaii.

Source: U.S. Census of Agriculture.

Table 7—Cropland uses and changes, by State, 1969-78

State and region	1969			1978[1]			Change, 1969-78		
	Harvested	Other[2]	Total[3]	Harvested	Other[2]	Total[3]	Harvested	Other[2]	Total[3]
				1,000 acres					
Connecticut	162	90	252	171	67	238	+9	−23	−14
Delaware	423	82	505	493	33	526	+70	−49	+21
Maine	458	249	707	470	202	672	+12	−47	−35
Maryland	1,301	525	1,826	1,493	355	1,849	+192	−169	+23
Massachusetts	190	91	280	202	85	286	+12	−6	+6
New Hampshire	116	73	189	128	53	181	+12	−20	−8
New Jersey	496	211	707	591	134	725	+95	−77	+18
New York	3,836	2,246	6,082	4,369	1,669	6,039	+534	−577	−43
Pennsylvania	3,687	1,911	5,598	4,286	1,514	5,800	+599	−397	+202
Rhode Island	22	10	32	24	10	34	+3	0	+3
Vermont	511	325	836	560	260	819	+49	−65	−17
Northeast	11,202	5,813	17,015	12,788	4,382	17,170	+1,586	−1,430	+156
Michigan	5,502	3,079	8,580	6,795	1,697	8,492	+1,293	−1,382	−88
Minnesota	15,649	6,662	22,311	19,146	3,518	22,663	+3,496	−3,145	+352
Wisconsin	8,134	3,430	11,564	9,888	2,291	12,179	+1,754	−1,139	+615
Lake States	29,285	13,171	42,456	35,828	7,506	43,334	+6,544	−5,666	+878
Illinois	19,352	5,477	24,829	22,696	2,534	25,230	+3,344	−2,944	+400
Indiana	9,670	3,881	13,552	11,829	1,796	13,625	+2,158	−2,085	+73
Iowa	19,287	8,452	27,739	23,634	4,472	28,105	+4,347	−3,981	+366
Missouri	10,036	10,919	20,955	12,468	8,015	20,483	+2,432	−2,903	−472
Ohio	8,515	3,932	12,447	10,245	1,981	12,226	+1,730	−1,951	−221
Corn Belt	66,860	32,661	99,521	80,870	18,798	99,668	+14,011	−13,863	+147
Kansas	17,649	14,119	31,768	19,009	10,931	29,940	+1,360	−3,187	−1,827
Nebraska	14,023	8,200	22,223	16,369	5,923	22,292	+2,346	−2,277	+69
North Dakota	17,175	12,284	29,459	18,978	9,648	28,627	+1,804	−2,636	−832
South Dakota	12,634	7,203	19,838	13,864	4,907	18,772	+1,230	−2,296	−1,066
Northern Plains	61,481	41,806	103,287	68,221	31,410	99,631	+6,739	−10,396	−3,656

See footnotes at end of table.

Continued—

Table 7—Cropland uses and changes, by State, 1969-78—Continued

State and region	1969			1978[1]			Change, 1969-78		
	Harvested	Other[2]	Total[3]	Harvested	Other[2]	Total[3]	Harvested	Other[2]	Total[3]
				1,000 acres					
Kentucky	3,128	6,315	9,443	4,536	4,951	9,487	+1,408	−1,364	+44
North Carolina	3,472	2,495	5,967	4,501	1,692	6,193	+1,029	−803	+225
Tennessee	3,472	4,931	8,404	4,441	3,532	7,973	+969	−1,399	−430
Virginia	2,278	2,323	4,601	2,625	2,000	4,624	+347	−323	+24
West Virginia	539	1,015	1,553	584	865	1,449	+45	−149	−105
Appalachian	12,889	17,079	29,968	16,686	13,040	29,727	+3,797	−4,039	−242
Alabama	2,706	3,083	5,789	3,380	2,187	5,567	+674	−896	−222
Florida	2,234	1,540	3,774	2,717	1,648	4,365	+483	+108	+591
Georgia	3,651	3,184	6,835	4,701	2,224	6,925	+1,050	−960	+90
South Carolina	2,042	1,398	3,440	2,532	904	3,436	+490	−494	−4
Southeast	10,633	9,205	19,838	13,330	6,963	20,292	+2,697	−2,243	+454
Arkansas	6,805	3,182	9,987	7,594	2,864	10,458	+789	−318	+471
Louisiana	3,443	2,399	5,842	4,851	1,574	6,425	+1,408	−825	+583
Mississippi	4,752	3,437	8,189	5,866	2,365	8,231	+1,114	−1,072	+42
Delta States	14,999	9,019	24,018	18,311	6,803	25,114	+3,311	−2,216	+1,096
Oklahoma	8,265	7,393	15,658	8,597	5,902	14,499	+332	−1,491	−1,159
Texas	19,825	19,938	39,762	20,653	19,106	39,760	+829	−831	−3
Southern Plains	28,089	27,331	55,420	29,250	25,008	54,259	+1,161	−2,323	−1,162
Arizona	1,079	552	1,631	1,115	459	1,575	+36	−93	−57
Colorado	5,266	5,508	10,773	5,860	4,814	10,674	+594	−694	−100
Idaho	3,955	2,218	6,172	4,831	1,749	6,580	+876	−468	+408
Montana	7,937	8,171	16,109	8,748	7,578	16,326	+811	−593	+218
Nevada	521	228	749	585	247	832	+64	+20	+83
New Mexico	1,008	1,274	2,282	1,211	1,080	2,291	+204	−194	+9
Utah	1,024	920	1,945	1,171	866	2,037	+146	−54	+92
Wyoming	1,686	1,103	2,788	1,786	945	2,730	+100	−158	−58
Mountain	22,476	19,973	42,449	25,306	17,739	43,044	+2,830	−2,235	+595
California	7,649	3,596	11,245	8,819	2,726	11,545	+1,170	−870	+300
Oregon	2,894	2,304	5,198	3,223	1,990	5,213	+329	−314	+15
Washington	4,367	3,863	8,230	5,027	3,270	8,298	+660	−592	+68
Pacific	14,910	9,763	24,672	17,069	7,987	25,056	+2,159	−1,776	+383
48 States[3]	272,824	185,821	458,646	317,660	139,636	457,295	+44,835	−46,186	−1,351

[1]1978 preliminary published data adjusted to 1969 farm definition and 1969 enumeration techniques.
[2]Includes cropland that was either idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, land on which all crops failed, or cropland used only for pasture or grazing.
[3]Acreages may not add to totals due to rounding.

Source: U.S. Census of Agriculture.

Table 8—Cropland used for crops and counties showing changes, by region, 1949-78

Region[1]	Cropland used for crops[2]		Counties with—				Regional net change[3]
			Increases		Decreases or no change		
	1949	1978	Number	Million acres	Number		
	—Million acres—					—Million acres—	
Northeast	20.3	13.9	11	0.2	233	6.6	−6.4
Lake States	40.7	39.3	83	1.6	159	3.0	−1.4
Corn Belt	81.0	85.4	319	7.7	177	3.3	+4.4
Northern Plains	96.0	90.2	87	2.4	231	8.2	−5.8
Appalachian	26.1	19.0	74	.9	430	8.1	−7.2
Southeast	23.6	15.0	47	1.3	292	9.9	−8.6
Delta States	18.4	19.6	73	4.8	148	3.5	+1.2
Southern Plains	45.0	38.1	78	3.0	253	9.9	−6.9
Mountain	35.5	38.2	142	5.2	137	2.5	+2.8
Pacific[4]	21.8	22.1	39	2.6	94	2.3	+.3
48 States[3]	408.5	380.9	953	29.6	2,154	57.2	−27.6

[1]See table 9 for State data in each region.

[2]Includes cropland that was either harvested, idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, or land on which all crops failed. Excludes cropland used only for pasture or grazing. 1978 data are from county-level data tapes and have not been adjusted to 1969 farm definition or for underenumeration. Thus, the 1978 data are not directly comparable with preliminary published State summary data which include an adjustment for underenumeration.

[3]Acreages may not add to totals due to rounding.

[4]Excludes Alaska and Hawaii.

Source: U.S. Census of Agriculture.

Table 9—Cropland used for crops and counties showing changes, by State, 1949-78

State and region	Cropland used for crops[1]		Change, 1949-78				
			Counties with—				Net change[2]
			Increases		Decreases or no change		
	1949	1978	Number	1,000 acres	Number		
	—1,000 acres—					—1,000 acres—	
Connecticut	369	184	0	0	8	185	−185
Delaware	463	508	2	58	1	13	+45
Maine	1,186	559	0	0	16	627	−627
Maryland	1,838	1,597	7	97	17	338	−241
Massachusetts	473	214	0	0	14	259	−259
New Hampshire	349	134	0	0	10	216	−216
New Jersey	930	636	1	5	20	299	−294
New York	6,906	4,816	0	0	62	2,090	−2,090
Pennsylvania	6,834	4,684	0	0	67	2,149	−2,149
Rhode Island	55	27	0	0	5	28	−28
Vermont	937	579	1	1	13	358	−357
Northeast	20,340	13,939	11	161	233	6,562	−6,401
Michigan	9,061	7,688	10	121	73	1,494	−1,373
Minnesota	20,901	20,962	39	1,023	48	962	+61
Wisconsin	10,718	10,644	34	486	38	560	−74
Lake States	40,680	39,294	83	1,630	159	3,016	−1,386
Illinois	21,352	23,682	85	2,682	17	352	+2,330
Indiana	11,777	12,468	60	1,025	32	334	+691
Iowa	22,906	24,913	87	2,090	12	83	+2,008
Missouri	13,653	13,508	48	1,094	67	1,239	−145
Ohio	11,329	10,866	39	803	49	1,266	−463
Corn Belt	81,017	85,438	319	7,694	177	3,274	+4,421

See footnotes at end of table.

Continued—

Table 9—Cropland used for crops and counties showing changes, by State, 1949-78—Continued

State and region	Cropland used for crops[1]		Change, 1949-78				
			Counties with—				Net change[2]
	1949	1978	Increases		Decreases or no change		
	—1,000 acres—		Number	1,000 acres	Number	—1,000 acres—	
Kansas	27,919	26,740	26	802	79	1,980	−1,178
Nebraska	22,377	19,957	19	270	74	2,690	−2,420
North Dakota	26,693	27,004	32	992	21	681	+311
South Dakota	19,006	16,465	10	331	57	2,871	−2,540
Northern Plains	95,994	90,166	87	2,395	231	8,222	−5,827
Kentucky	6,336	5,307	31	324	89	1,353	−1,029
North Carolina	6,966	5,128	21	254	79	2,092	−1,838
Tennessee	7,064	4,901	9	205	86	2,368	−2,164
Virginia	4,214	2,986	13	118	121	1,346	−1,228
West Virginia	1,567	643	0	0	55	924	−924
Appalachian	26,146	18,964	74	901	430	8,083	−7,183
Alabama	7,123	3,748	2	57	65	3,432	−3,375
Florida	2,388	3,119	33	1,145	34	413	+732
Georgia	9,214	5,352	10	57	149	3,920	−3,862
South Carolina	4,892	2,791	2	15	44	2,116	−2,101
Southeast	23,616	15,010	47	1,274	292	9,881	−8,606
Arkansas	7,182	8,051	27	1,982	48	1,114	+868
Louisiana	3,854	5,262	28	2,083	36	675	+1,408
Mississippi	7,368	6,331	18	699	64	1,735	−1,036
Delta States	18,404	19,644	73	4,764	148	3,524	+1,240
Oklahoma	13,698	10,308	1	2	76	3,392	−3,390
Texas	31,328	27,801	77	2,998	177	6,525	−3,527
Southern Plains	45,026	38,109	78	3,000	253	9,917	−6,917
Arizona	1,082	1,440	9	400	5	42	+358
Colorado	10,057	9,611	19	602	44	1,049	−446
Idaho	4,745	5,807	34	1,133	10	71	+1,062
Montana	12,657	15,120	40	2,676	17	213	+2,463
Nevada	474	655	14	187	3	6	+181
New Mexico	2,393	1,819	8	69	24	644	−574
Utah	1,748	1,534	7	53	22	266	−213
Wyoming	2,307	2,253	11	110	12	164	−54
Mountain	35,464	38,239	142	5,230	137	2,455	+2,777
California	10,235	9,988	16	1,197	42	1,444	−246
Oregon	4,568	4,397	8	288	28	459	−172
Washington	7,006	7,695	15	1,070	24	380	+689
Pacific	21,809	22,080	39	2,555	94	2,283	+271
48 States[2]	408,494	380,882	953	29,604	2,154	57,217	−27,612

[1]Includes cropland that was either harvested, idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, or land on which all crops failed. Excludes cropland used only for pasture or grazing. 1978 data are from county-level data tapes and have not been adjusted to 1969 farm definitions or for underenumeration. Thus, the 1978 data are not directly comparable with preliminary published State summary data which include an adjustment for underenumeration.

[2]Acreages may not add to totals due to rounding.

Source: U.S. Census of Agriculture.

Table 10—Cropland used for crops and counties showing changes, by region, 1949-69

Region[1]	Cropland used for crops[2]		Counties with—				Regional net change[3]
			Increases		Decreases or no change		
	1949	1978					
	—Million acres—		Number	Million acres	Number	—Million acres—	
Northeast	20.3	13.3	8	0.1	236	7.1	−7.0
Lake States	40.7	37.2	49	.7	193	4.3	−3.5
Corn Belt	81.0	82.6	282	5.2	214	3.6	+1.6
Northern Plains	96.0	92.0	99	2.4	219	6.4	−4.0
Appalachian	26.1	17.5	31	.2	473	8.8	−8.6
Southeast	23.6	14.2	39	.9	300	10.3	−9.4
Delta States	18.4	17.3	64	3.1	157	4.2	−1.1
Southern Plains	45.0	38.6	73	2.3	258	8.7	−6.4
Mountain	35.5	36.7	109	3.8	170	2.6	+1.3
Pacific[4]	21.8	20.9	31	1.4	102	2.3	−.9
48 States[3]	408.5	370.5	785	20.2	2,322	58.3	−38.0

[1]See table 11 for State data in each region.
[2]Includes cropland that was either harvested, idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, or land on which all crops failed. Excludes cropland used only for pasture or grazing.
[3]Acreages may not add to totals due to rounding.
[4]Excludes Alaska and Hawaii.

Table 11—Cropland used for crops and counties showing changes, by State, 1949-69

State and region	Cropland used for crops[1]		Change, 1949-69				
			Counties with—				Net change[2]
			Increases		Decreases or no change		
	1949	1969					
	—1,000 acres—		Number	1,000 acres	Number	—1,000 acres—	
Connecticut	369	184	0	0	8	186	−186
Delaware	463	479	2	30	1	14	+16
Maine	1,186	588	0	0	16	597	−597
Maryland	1,838	1,530	6	64	18	371	−307
Massachusetts	473	209	0	0	14	265	−265
New Hampshire	349	133	0	0	10	216	−216
New Jersey	930	611	0	0	21	319	−319
New York	6,906	4,590	0	0	62	2,317	−2,317
Pennsylvania	6,834	4,443	0	0	67	2,390	−2,390
Rhode Island	55	23	0	0	5	32	−32
Vermont	937	557	0	0	14	379	−379
Northeast	20,340	13,347	8	94	236	7,086	−6,992
Michigan	9,061	7,489	9	103	74	1,675	−1,572
Minnesota	20,901	20,211	34	593	53	1,283	−690
Wisconsin	10,718	9,462	6	47	66	1,303	−1,256
Lake States	40,680	37,162	49	743	193	4,261	−3,518
Illinois	21,352	22,650	82	1,628	20	330	+1,298
Indiana	11,777	11,980	48	613	44	410	+202
Iowa	22,906	23,731	71	1,008	28	183	+826
Missouri	13,653	13,553	48	1,171	67	1,271	−100
Ohio	11,329	10,721	33	753	55	1,361	−608
Corn Belt	81,017	82,636	282	5,173	214	3,555	+1,618
Kansas	27,919	27,843	45	1,056	60	1,131	−76
Nebraska	22,377	19,762	12	75	81	2,690	−2,615
North Dakota	26,693	27,570	37	1,192	16	315	+877
South Dakota	19,006	16,840	5	69	62	2,235	−2,166
Northern Plains	95,994	92,014	99	2,392	219	6,371	−3,979

See footnotes at end of table.
Continued—

Table 11—Cropland used for crops and counties showing changes, by State, 1949-69—Continued

State and region	Cropland used for crops[1]		Change, 1949-69				
			Counties with—				
	1949	1969	Increases		Decreases or no change		Net change[2]
	—1,000 acres—		Number	1,000 acres	Number	—1,000 acres—	
Kentucky	6,336	4,528	6	38	114	1,846	−1,808
North Carolina	6,966	4,854	11	77	89	2,189	−2,112
Tennessee	7,064	4,623	6	67	89	2,509	−2,442
Virginia	4,214	2,868	8	17	126	1,362	−1,345
West Virginia	1,567	668	0	0	55	899	−899
Appalachian	26,146	17,540	31	199	473	8,805	−8,606
Alabama	7,123	3,690	1	53	66	3,486	−3,434
Florida	2,388	2,772	34	857	33	473	+384
Georgia	9,214	4,996	4	18	155	4,236	−4,218
South Carolina	4,892	2,746	0	0	46	2,146	−2,146
Southeast	23,616	14,203	39	928	300	10,341	−9,413
Arkansas	7,182	7,373	24	1,531	51	1,340	+191
Louisiana	3,854	4,195	27	1,112	37	771	+341
Mississippi	7,368	5,766	13	467	69	2,069	−1,602
Delta States	18,404	17,334	64	3,110	157	4,180	−1,070
Oklahoma	13,698	10,754	2	21	75	2,966	−2,944
Texas	31,328	27,833	71	2,282	183	5,777	−3,494
Southern Plains	45,026	38,587	73	2,303	258	8,743	−6,439
Arizona	1,082	1,485	7	442	7	39	+403
Colorado	10,057	9,382	14	365	49	1,040	−675
Idaho	4,745	5,205	27	591	17	131	+460
Montana	12,657	14,667	35	2,186	22	175	+2,010
Nevada	474	587	11	137	6	24	+113
New Mexico	2,393	1,769	5	38	27	662	−624
Utah	1,748	1,438	2	5	27	315	−310
Wyoming	2,307	2,188	8	64	15	183	−119
Mountain	35,464	36,721	109	3,828	170	2,569	+1,258
California	10,235	9,399	12	593	46	1,428	−835
Oregon	4,568	4,120	5	108	31	556	−448
Washington	7,006	7,396	14	748	25	358	+390
Pacific	21,809	20,915	31	1,449	102	2,342	−893
48 States[2]	408,494	370,460	785	20,219	2,322	58,253	−38,035

[1]Includes cropland that was either harvested, idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, or land on which all crops failed. Excludes cropland used only for pasture or grazing.

[2]Acreages may not add to totals due to rounding.

Source: U.S. Census of Agriculture.

Table 12—Cropland used for crops and counties showing changes, by region, 1969-78

Region[1]	Cropland[2]		Counties with—				Regional net change[3]
	1969	1978	Increases		Decreases or no change		
	—Million acres—		Number	Million acres	Number	—Million acres—	
Northeast	13.3	13.9	166	0.8	78	0.2	+0.6
Lake States	37.2	39.3	190	2.4	52	.2	+2.1
Corn Belt	82.6	85.4	366	3.6	130	.8	+2.8
Northern Plains	92.0	90.2	108	1.5	210	3.4	−1.8
Appalachian	17.5	19.0	268	1.9	236	.5	+1.4
Southeast	14.2	15.0	199	1.4	140	.6	+.8
Delta States	17.3	19.6	168	2.5	53	.2	+2.3
Southern Plains	38.6	38.1	167	2.1	164	2.6	−.5
Mountain	36.7	38.2	160	2.6	119	1.1	+1.5
Pacific[4]	20.9	22.1	83	1.6	50	.4	+1.2
48 States[2]	370.5	380.9	1,875	20.4	1,232	10.0	+10.4

[1]See table 13 for State data in each region.
[2]Includes cropland that was either harvested, idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, or land on which all crops failed. Excludes cropland used only for pasture or grazing. 1978 data are from county-level data tapes and have not been adjusted to 1969 farm definition or for underenumeration. Thus, the 1978 data are not directly comparable with preliminary published State summary data which include an adjustment for underenumeration.
[3]Acreages may not add to totals due to rounding.
[4]Excludes Alaska and Hawaii.

Source: U.S. Census of Agriculture.

Table 13—Cropland used for crops and counties showing changes, by State, 1969-78

State and region	Cropland used for crops[1]		Change, 1969-78				
			Counties with—				Net change[2]
	1969	1978	Increases		Decreases or no change		
	—1,000 acres—		Number	1,000 acres	Number	—1,000 acres—	
Connecticut	184	184	4	5	4	5	+1
Delaware	479	508	3	29	0	0	+29
Maine	588	559	12	32	4	61	−30
Maryland	1,530	1,597	16	78	8	12	+66
Massachusetts	209	214	8	9	6	4	+6
New Hampshire	133	134	5	6	5	5	+1
New Jersey	611	636	11	40	10	14	+26
New York	4,590	4,816	42	266	20	39	+226
Pennsylvania	4,443	4,684	53	263	14	22	+241
Rhode Island	23	27	2	4	3	1	+4
Vermont	557	579	10	31	4	9	+22
Northeast	13,347	13,939	166	763	78	172	+592
Michigan	7,489	7,688	54	306	29	107	+199
Minnesota	20,211	20,962	69	873	18	122	+751
Wisconsin	9,462	10,644	67	1,190	5	8	+1,182
Lake States	37,162	39,294	190	2,369	52	237	+2,132
Illinois	22,650	23,682	85	1,144	17	112	+1,032
Indiana	11,980	12,468	78	532	14	43	+487
Iowa	23,731	24,913	88	1,226	11	44	+1,182
Missouri	13,553	13,508	64	350	51	395	−45
Ohio	10,721	10,866	51	346	37	201	+145
Corn Belt	82,636	85,438	366	3,598	130	795	+2,803

See footnotes at end of table.

Continued—

Table 13—Cropland used for crops and counties showing changes, by State, 1969-78—Continued

State and region	Cropland used for crops[1]		Change, 1969-78				
			Counties with—				Net change[2]
	1969	1978	Increases		Decreases or no change		
	—1,000 acres—		Number	1,000 acres	Number	—1,000 acres—	
Kansas	27,843	26,740	21	227	84	1,330	−1,103
Nebraska	19,762	19,957	50	599	43	404	+195
North Dakota	27,570	27,004	18	263	35	829	−566
South Dakota	16,840	16,465	19	440	48	814	−374
Northern Plains	92,014	90,166	108	1,529	210	3,377	−1,848
Kentucky	4,528	5,307	87	840	33	61	+779
North Carolina	4,854	5,128	53	445	47	172	+274
Tennessee	4,623	4,901	58	377	37	99	+278
Virginia	2,868	2,986	50	252	84	135	+117
West Virginia	668	643	20	28	35	53	−25
Appalachian	17,540	18,964	268	1,942	236	520	+1,424
Alabama	3,690	3,748	29	230	38	172	+58
Florida	2,772	3,119	47	515	20	167	+348
Georgia	4,996	5,352	100	483	59	127	+356
South Carolina	2,746	2,791	23	130	23	86	+45
Southeast	14,203	15,010	199	1,358	140	552	+807
Arkansas	7,373	8,051	62	737	13	60	+677
Louisiana	4,195	5,262	48	1,107	16	40	+1,067
Mississippi	5,766	6,331	58	693	24	127	+566
Delta States	17,334	19,644	168	2,537	53	227	+2,310
Oklahoma	10,754	10,308	41	269	36	715	−446
Texas	27,833	27,801	126	1,844	128	1,877	−33
Southern Plains	38,587	38,109	167	2,113	164	2,592	−479
Arizona	1,485	1,440	6	75	8	120	−45
Colorado	9,382	9,611	35	517	28	289	+229
Idaho	5,205	5,807	34	667	10	65	+602
Montana	14,667	15,120	32	772	25	319	+452
Nevada	587	655	10	81	7	13	+68
New Mexico	1,769	1,819	14	159	18	109	+50
Utah	1,438	1,534	16	160	13	63	+97
Wyoming	2,188	2,253	13	172	10	106	+65
Mountain	36,721	38,239	160	2,603	119	1,084	+1,518
California	9,399	9,988	40	829	18	240	+589
Oregon	4,120	4,397	22	350	14	74	+276
Washington	7,396	7,695	21	410	18	111	+299
Pacific	20,915	22,080	83	1,589	50	425	+1,164
48 States[2]	370,460	380,882	1,875	20,401	1,232	9,981	+10,422

[1]Includes cropland that was either harvested, idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, or land on which all crops failed. Excludes cropland used only for pasture. 1978 data are from county-level data tapes and have not been adjusted to 1969 farm definition or for underenumeration. Thus, the 1978 data are not directly comparable with preliminary published State summary data which include an adjustment for underenumeration.

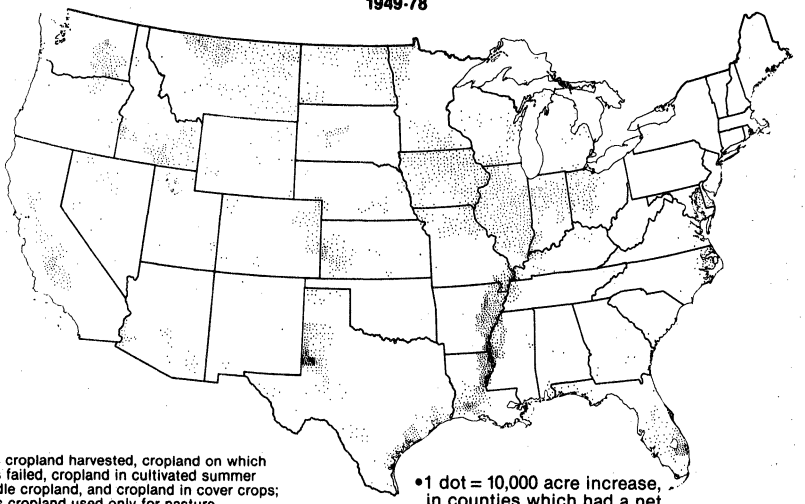
[2]Acreages may not add to totals due to rounding.

Source: U.S. Census of Agriculture.

Figure 1

Cropland Acreage Changes, 1949-78

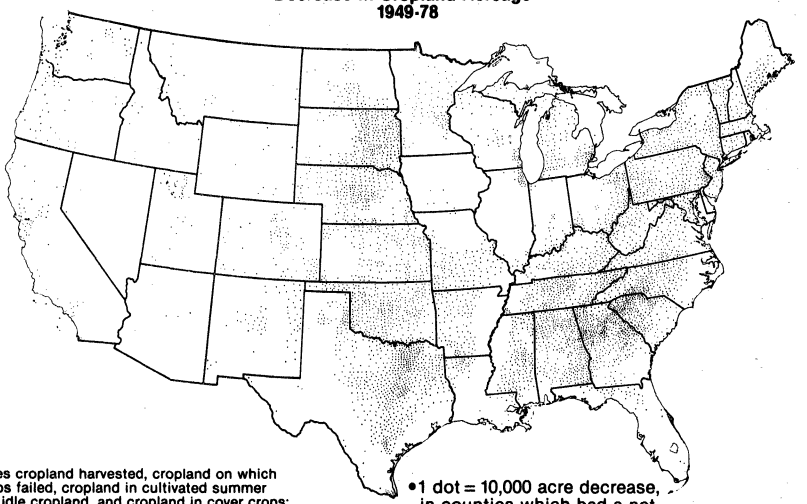
**Increase in Cropland Acreage*
1949-78**



*Includes cropland harvested, cropland on which all crops failed, cropland in cultivated summer fallow, idle cropland, and cropland in cover crops; excludes cropland used only for pasture.
Source: U.S. Census for Agriculture

•1 dot = 10,000 acre increase, in counties which had a net increase in cropland acreage.

**Decrease in Cropland Acreage*
1949-78**



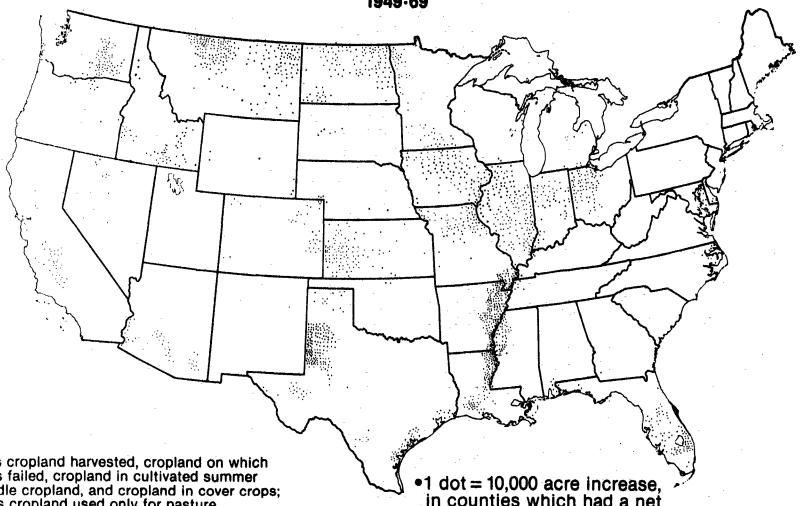
*Includes cropland harvested, cropland on which all crops failed, cropland in cultivated summer fallow, idle cropland, and cropland in cover crops; excludes cropland used only for pasture.
Source: U.S. Census for Agriculture

•1 dot = 10,000 acre decrease, in counties which had a net decrease in cropland acreage.

Figure 2

Cropland Acreage Changes, 1949-69

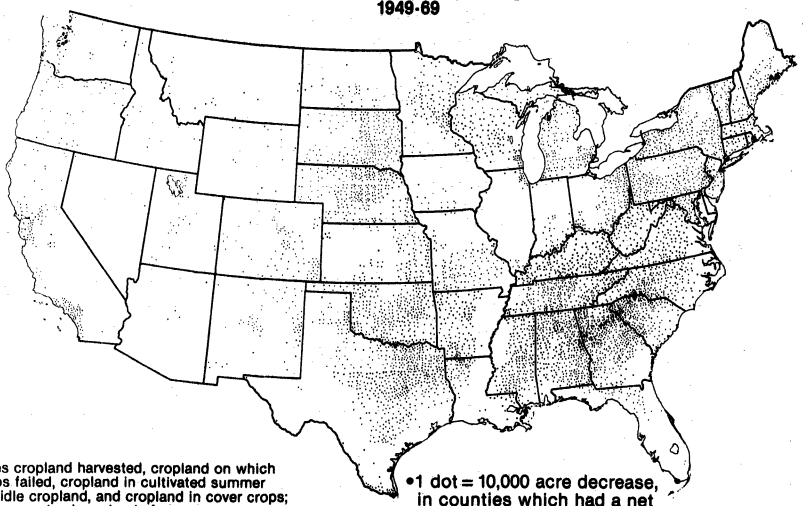
**Increase in Cropland Acreage*
1949-69**



*Includes cropland harvested, cropland on which all crops failed, cropland in cultivated summer fallow, idle cropland, and cropland in cover crops; excludes cropland used only for pasture.
Source: U.S. Census for Agriculture

•1 dot = 10,000 acre increase, in counties which had a net increase in cropland acreage.

**Decrease in Cropland Acreage*
1949-69**



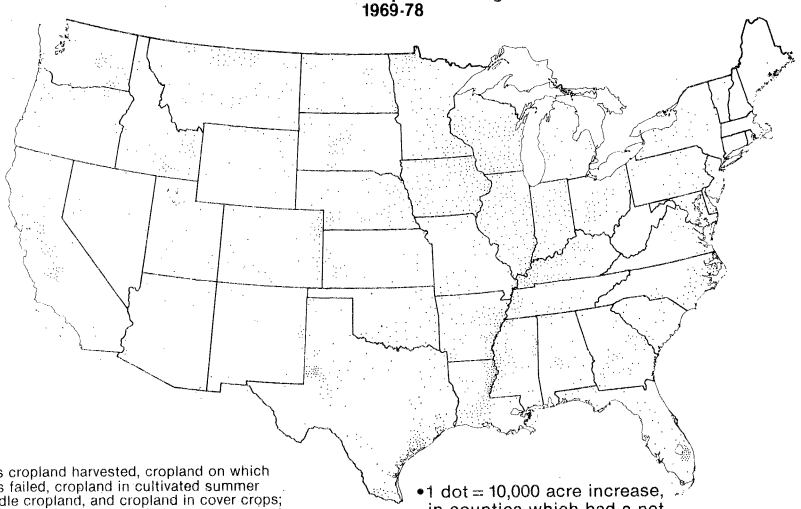
*Includes cropland harvested, cropland on which all crops failed, cropland in cultivated summer fallow, idle cropland, and cropland in cover crops; excludes cropland used only for pasture.
Source: U.S. Census for Agriculture

•1 dot = 10,000 acre decrease, in counties which had a net decrease in cropland acreage.

Figure 3

Cropland Acreage Changes, 1969-78

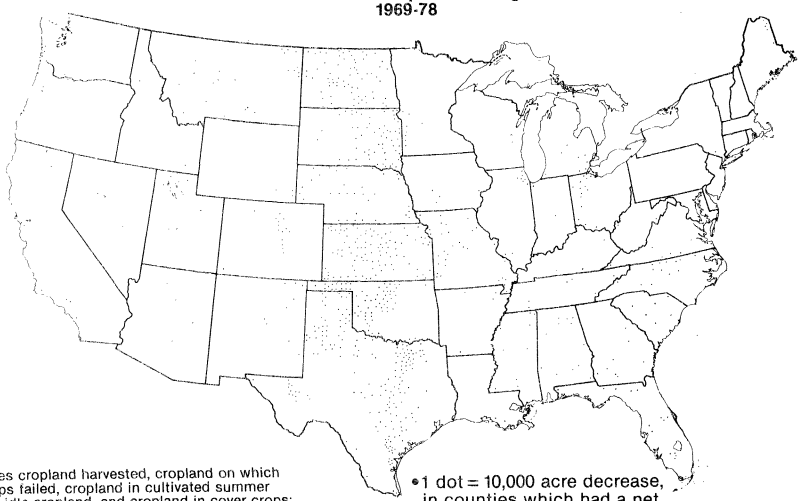
**Increase in Cropland Acreage*
1969-78**



*Includes cropland harvested, cropland on which all crops failed, cropland in cultivated summer fallow, idle cropland, and cropland in cover crops; excludes cropland used only for pasture.
Source: U.S. Census for Agriculture

•1 dot = 10,000 acre increase, in counties which had a net increase in cropland acreage.

**Decrease in Cropland Acreage*
1969-78**



*Includes cropland harvested, cropland on which all crops failed, cropland in cultivated summer fallow, idle cropland, and cropland in cover crops; excludes cropland used only for pasture.
Source: U.S. Census for Agriculture

•1 dot = 10,000 acre decrease, in counties which had a net decrease in cropland acreage.

Appendix

Use of census data to identify trends is complicated by the lack of full comparability of data. To the extent possible, 1974 and 1978 data presented in this report have been adjusted for comparability with 1969 data. Corresponding adjustments for earlier censuses were not feasible.

The agricultural censuses were conducted by personal interview in a complete canvass of rural areas before 1969. The 1969 and 1974 censuses used self-enumerated mail questionnaires. Evaluation studies conducted by the Census Bureau concluded that approximately 17 percent of all forms were missed in the 1969 census, and 13 percent were missed in the 1974 census, representing about 3 percent of the total value of all agricultural products sold for each of the 2 census years.

The 1978 census attempted to improve survey by supplementing the mail questionnaire with a thorough personal canvass of a statistical area sample designed to provide State estimates for farms not on mailing lists. However, the sample was not large enough to provide estimates for counties. National, regional, and State preliminary summary data from the 1978 census as published by the Census Bureau combined estimates of the mail questionnaire and the statistical area segment sample. The amount of the combined estimates attributable to the statistical area segment sample was also published.

All 1978 data contained in this report exclude acreage estimates obtained by canvassing the statistical area segment sample. Although this results in greater underenumeration and a lack of perfect comparability with published national, regional, and State data, the method achieves greater comparability with 1969 enumeration techniques. The effect of this adjustment is a decrease from published totals. These effects are shown by region for selected components of cropland in appendix table 1 under the column heading "Adjustment due to change in enumeration techniques."

Changes in the definition of a farm also affect the comparability of data between censuses. In 1949 and 1954, places of 3 or more acres were counted as farms by the census if the annual value of agricultural products, excluding home garden products, amounted to $150 or more. Places of less than 3 acres were counted as farms only if the annual value of sales of agricultural products amounted to $150 or more. Places where the value of agricultural products was less than the minimum were counted as farms if, normally, they could be expected to produce the minimum. The definition used for the 1959, 1964, and 1969 censuses, and for the 1974 preliminary county reports, counted a farm as any place with less than 10 acres from which $250 or more of agricultural products were sold or normally would have been sold during the census year, or any place of 10 acres or more from which $50 or more of agricultural products were sold or normally would have been sold during the census year. By the 1978 census, the definition of a farm had been changed to any place from which $1,000 or more of agricultural products were sold, or normally would have been sold.

In preliminary reports of the 1978 census, the Census Bureau published the effect of the definition change since 1969 for selected items reported in the 1974 and 1978 censuses. Except for acreage estimates of cropland used for crops, all 1974 and 1978 estimates presented in this report have been adjusted to the 1969 farm definition. Because cropland used for crop estimates were developed from county-level data tapes that did not include the effects of definitional change, estimates were not conformed to the 1969 farm definition. Thus, in this respect, 1978 cropland used for crop estimates were not entirely comparable with other estimates contained in this report. The effects of adjusting 1978 reported estimates to the 1969 farm definition are shown, by region, for selected components of cropland in appendix table 1 under the column heading "Adjustment due to change in farm definition."

The effect of adjusting to the 1969 farm definition increases the reported acreage of cropland components. The adjustment, therefore, tends to offset the adjustment to 1969 enumeration techniques (app. table 1).

Information was not available to conform 1949 and 1954 acreage estimates to the 1969 farm definition, although this does not significantly alter this report's results.

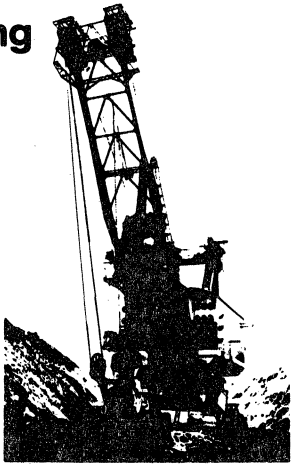
Appendix table 1—Adjustments to 1978 census cropland estimates for comparability with 1969 census estimates, by region

Region	Harvested			Other[1]			Total		
	Adjustment due to change in—		Net adjustment[2]	Adjustment due to change in—		Net adjustment[2]	Adjustment due to change in—		Net adjustment[2]
	Enumeration techniques	Farm definition		Enumeration techniques	Farm definition		Enumeration techniques	Farm definition	
				1,000 acres					
Northeast	−458	+151	−307	−561	+504	−56	−1,018	+656	−362
Lake States	−397	+100	−297	−409	+438	+29	−806	+538	−268
Corn Belt	−691	+150	−541	−621	+645	+24	−1,312	+795	−517
Northern Plains	−398	+26	−372	−252	+128	−124	−650	+154	−496
Appalachian	−478	+196	−282	−1,043	+946	−97	−1,521	+1,142	−379
Southeast	−254	+59	−195	−575	+443	−131	−829	+503	−326
Delta States	−320	+50	−270	−648	+415	−232	−967	+466	−501
Southern Plains	−326	+59	−267	−1,017	+686	−331	−1,343	+745	−598
Mountain	−259	+46	−213	−391	+260	−131	−649	+306	−343
Pacific[3]	−303	+80	−223	−578	+354	−223	−881	+434	−447
48 States[2]	−3,883	+918	−2,965	−6,093	+4,821	−1,272	−9,976	+5,738	−4,238

[1]Includes cropland that was either idle, planted to soil improvement crops that were not harvested or pastured, summer fallow, land on which all crops failed, or cropland used only for pasture or grazing.
[2]Acreages may not add to totals due to rounding.
[3]Excludes Alaska and Hawaii.

Source: U.S. Census of Agriculture.

Northern Great Plains Coal Mining



What are the likely effects of expanded coal mining in Montana, Wyoming, and North Dakota on the small towns and communities there? Mining activity in the sparsely populated region has grown dramatically over the last decade—from less than 20 million tons of coal in 1970, to 100 million tons in 1978, with projections for 350 million tons per year by the mid-1980's.

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—It is in thick seams (some seams up to 200 feet thick), and can be recovered by strip mining.

To try to ascertain the effects of development on the region, the authors of this report used computerized simulations of various levels of coal activity to see if the communities could afford the increased level of government services and upgraded infrastructure required by new energy projects and the larger population attracted by those projects.

In the long run (10 years or more), most communities in the region will be able to pay for the services required by the new coal-related development, provided that they can tax the new developments. Without taxing authority (for instance, if the mine lies outside the taxing district of a locality), they will have problems.

Northern Great Plains Coal Mining: Regional Impacts (by Thomas F. Stinson, Lloyd D. Bender, and Stanley W. Voelker; AIB-452; July 1982; 36 pages; color illustrations; $5; stock no. 001-000-04265-3).

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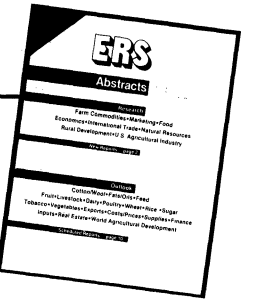

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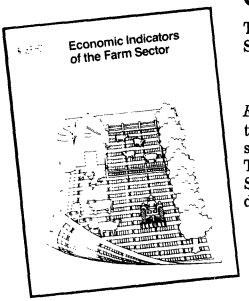

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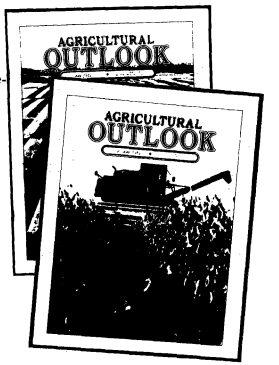

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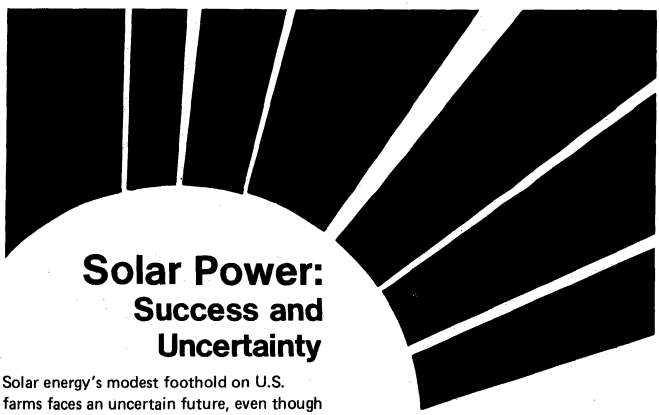

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- Solar-heated houses for brooding broilers
- Solar-heated greenhouses

***Progress of Solar Technology and Potential Farm Uses* (by Walter G. Heid, Jr., and Warren K. Trotter; AER-489; September 1982; 112 pages; $5). To order your copy, fill out the coupon on the back and send it, along with your payment, to the U.S. Government Printing Office.**